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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/960,523
Filing Date: September 21, 2001
Appellant(s): HOCHMUTH ET AL.

MAILED

APR 04 2006

Technology Center 2600

Hochmuth et al.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01/06/2006 appealing from the Office action
mailed 10/06/2005.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6331855	SCHAUSER	12-2001
5990852	SZAMREJ	11-1999
6094453	GOSSELIN	6-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6-8, 13-14, 16-17, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Schauser (U.S. Patent No. 6,331,855).

Referring to claims 1, 3, 6, 14, 16, and 19, as shown in Fig. 1, Schauser teaches a source processing system 2 communicates with a remote processing system 4 via a communication or transport medium 6 (Fig. 1A) (col. 3, lines 57-60) (*a network interface circuit*). Schauser further teaches the CPU 12 may poll a number of subregions (tiles) or lines of the screen, to determine if a change has occurred. In that regard, the subregions (tiles) or lines may be predetermined locations, statistically determined location(s) or arbitrarily determined locations. In particular, each frame of pixels that are currently displayed are stored in the frame buffer 18 (*corresponding to a temporary memory*), while the pixels representing a previously displayed image, for example, the last updated image, are stored in system memory 16 (*corresponding to a frame buffer memory*). The techniques of the present invention compares a portion of the currently displayed image to a corresponding portion of a previously displayed image to determine if changes have occurred (*a comparison logic to determine the difference between the current frame and previous frame by a predetermined measure*). If so, the changes are stored (*overwriting the stored graphics information with the compared portion*) and/or forwarded to the

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remote computer 4 (*a transmission logic to transmit only the portion of the current frame to a destination computer*) (FIG. 1A and 5) (col. 5, lines 6-23). Schauser further teaches the remote computer 4 receives the changes forwarded by the source computer 2 and subsequently updates the pixels in its frame buffer (col. 5, lines 40-42) (*input logic to format and store a portion of a frame into an appropriate location of a frame buffer memory*).

In regard to claims 2, 13, and 17, as cited above, Schauser teaches each frame of pixels that are currently displayed are stored in the frame buffer 18, while the pixels representing a previously displayed image, for example, the last updated image, are stored in system memory 16. Thus, the system memory 16 should inherently store an entire frame to perform the comparison.

In regard to claims 7 and 8, Schauser teaches the communication or transportation medium 6 may be any communication or transportation medium, such as a network, telephone line, etc (col. 4, lines 3-6), thus including a local or a wide area network.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauser (U.S. Patent No. 6,331,855).

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Referring to claims 10-12, as cited above, Schauser teaches all the limitations of claims 10-13, except for a second input, a second frame buffer, and a second temporary memory. However, it would have been obvious to one skilled in the art to modify the apparatus as taught by Schauser and add another video input, another frame buffer, and another temporary memory in the manner described above in order to simultaneously transmit graphics information to more computers.

Claims 5, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauser (U.S. Patent No. 6,331,855) in view of Szamrej (U.S. Patent No. 5,990,852).

Referring to claims 5, 15, and 18, although Schauser does not teach compressing the changed portion of the frame before transmission, and decompressed at the receiving destination, techniques of compressing and decompressing during transmission of graphics information are well known in the art as described in Szamrej '852.

Szamrej teaches a method of transmitting display data from a first display to a second display by segmenting the first display into blocks; calculating and storing first values, each representing contents of one of the blocks; calculating second values, each representing the contents of one of the blocks, after the first values are calculated; and transmitting changed blocks from the first display to the second display when the first and second values for the changed blocks are unequal (Fig. 2B, steps 40-44). Szamrej further teaches the video memory corresponding to the blocks in the optimal rectangle (for a set of changed blocks) is read and stored temporarily in a buffer. The screen data in the temporary buffer is compressed using a conventional method and transferred to the remote display, together with the pointers or range of

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pointers identifying where the data should be displayed on the screen. The values computed in step 28 (FIG. 2A) using, e.g., CRC64, may also be transmitted with the screen data. The local and remote computer systems can then cache the screen data, the pointers and the computed values, to further reduce the amount of data to be transmitted and compression/decompression processing (col. 8, lines 36-57).

Therefore it would have been obvious to one skilled in the art to utilize the method as taught by Szamrej in combination with the method as taught by Schauser in order to provide a screen transfer method that is efficient in use of CPU resources, memory, and bandwidth (col. 2, lines 11-13).

Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauser (U.S. Patent No. 6,331,855) in view of Gosselin et al. (U.S. Patent No. 6,094,453).

Referring to claims 4 and 9, as cited above, Schauser teaches all the limitations of claims 4 and 9, except that the video signal is an analog video signal, and the network interface circuit is configured to format graphics information into IP packets.

However, Gosselin et al. teach a system and method for compressing and transmitting video data over a transmission medium, wherein a base image representing a reference for comparison of successive images in order to detect change in the successive images is then stored. The changes from the base image are encoded by storing the location of any change and the value of changed data, where the location of any change is stored in the form of a header file (col. 3, lines 8-32). Gosselin et al. further teach the received video signal is analog video signal

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(col. 6, lines 8-16), and the graphics information is formatted into internet protocol packets to be transmitted over the network (col. 13, lines 19-34).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Gosselin et al. in combination with the method as taught by Schauser in order to provide improved video transmission (col. 4, lines 2-6).

(10) Response to Argument

Discussion of claims 1-13

In response to Appellant's arguments that the cited reference Schauser does not entail any hardware changes, the examiner respectfully disagrees. In face on column 5, lines 6-23 with reference to Figures 1A and 1B, reference Schauser teaches **a each frame of pixels that are currently displayed are stored in the frame buffer 18** (corresponding to the claimed 'a temporary memory'), **while the pixels representing a previously displayed image, for example, the last updated image, are stored in system memory 16** (corresponding to the claimed 'a frame buffer memory'). **The techniques of the present invention compares a portion of the currently displayed image to a corresponding portion of a previously displayed image to determine if changes ('a predetermined measure') have occurred** (corresponding to the claimed 'a comparison logic'). **If so, the changes are stored and/or forwarded to the remote computer 4** (corresponding to 'a transmission logic') (FIG. 1A and 5) (col. 5, lines 6-23). Therefore, the changes occur in the hardware level of the system memory 16 and frame buffer 18.

In response to Appellant's argument that reference Schauser does not teach a comparison logic such that *'if the comparison logic determines that the portion of the current frame of graphic information differs from the corresponding portion of the previous frame by more than a predetermined measure'*, the examiner respectfully disagrees for at least the cited reasons given above.

Discussion of claims 14-15

In response to Appellant's argument that reference Schauser does not teach the claimed "input logic", the examiner recites from Schauser on column 5, lines 40-42, which states, **"the remote computer 4 receives the changes forwarded by the source computer 2 and subsequently updates the pixels in its frame buffer."** Since the 'changes' as cited above, being a portion less than the whole frame buffer, this feature can be interpreted on the claimed "input logic" of claim 14.

Discussion of claims 16-19

In response to Appellant's argument that reference Schauser does not interact at the frame buffer level, the examiner respectfully disagrees for at least the reason given above with regard to claim 1. In particular, Schauser teaches

each frame of pixels that are currently displayed are stored in the frame buffer 18 (receiving at least a portion of a current frame of graphics information), while the pixels representing a previously displayed image, for example, the last updated image, are stored in system memory 16 (storing at least a portion of a frame of graphics information obtained from a video signal). The techniques of the present invention compares a portion of the currently displayed image to a corresponding portion of a previously displayed image to

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determine if changes have occurred (*comparing a portion of the current frame of graphics information with a corresponding portion of the stored frame of graphics information*). **If so, the changes are stored** (*'overwriting the corresponding portion of the stored graphics information with the compared portion of the current frame of graphics information'*) **and/or forwarded to the remote computer 4** (*if the compared portion of the current frame of graphics information differs by at least a predetermined amount from the corresponding portion of the stored graphics information, then transmitting the compared portion of the current frame of graphics information to a destination computer*) (FIG. 1A and 5) (col. 5, lines 6-23).

Additional Discussion of Claims 5, 15, and 18

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, since both Schauser and Szamrej teach methods of transmitting graphics information over a computer network, and transmitting changes on the display screen, and Szamrej further teach compressing graphics information before transmission, and also teach decompressing after receiving graphics information, it would have been obvious to one skilled in the art to utilize the method of compressing/decompressing as taught by Szamrej in combination with the method of transmitting graphics information as taught by Schauser in order to provide a screen transfer method that is efficient in use of CPU resources, memory, and bandwidth (col. 2, lines 11-13).

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Additional Discussion of Claims 4 and 9

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one skilled in the time of the invention to utilize the method of transmitting analog video signals using Internet Protocol packets in order to provide improved video transmission (col. 4, lines 2-6).

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,



Hau H. Nguyen
Patent Examiner
Art Unit 2628

Conferee:

Conferee:



Kee Tung
Kee M. Tung
Primary Examiner



Ulka Chauhan